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No. VIII.

INSTRUMENT FOR ASCERTAINING THE
STABILITY OF A SHIP.

The SILVER MEDAL was voted to Mr. ADOLPHUS GEORGE EDYE, Assistant Surveyor on Board the African Steam Vessel, for his Instrument for ascertaining the Stability and Inclination of a Ship when under Sail. The following Communication has been received from the Candidate, and one of the Instruments has been placed in the Society's Repository.

THE utility and importance of an instrument for ascertaining, with precision, the stability and inclination of a ship of war under sail, is too well known to require from the inventor a lengthened explanation; he will, therefore, confine himself to the simple fact of his having been induced to give his attention to the subject, and will merely mention, that the result has, by far, exceeded his expectation.

The instrument proposed by him, of which the accompanying is a model, has been tried by desire of the Lords Commissioners of the Admiralty, on board Her Majesty's ships *Inconstant* and *Pique*, under almost every circumstance, to prove its efficiency; and copies of the favourable reports upon it, from the captains of those ships, together with a general recommendation of its merits, from several highly distinguished officers, are annexed.

Although, from its simplicity, its usefulness will be

seen immediately, by those to whom its application may be familiar, still there may be some persons for whose more ready information a short explanation may be desirable; the inventor, therefore, begs to mention, that while the two horizontal hands fix on the index the extreme inclination of the ship, either under a press of sail, or in a squall, or a gale of wind, the pendulum points out any immediate increase or decrease of it; and if the ship be in pursuit of an enemy, the elevation or depression of her guns, to ensure the effect of her shot, may be regulated with the utmost precision by consulting both.

Portsmouth, October 30, 1837.

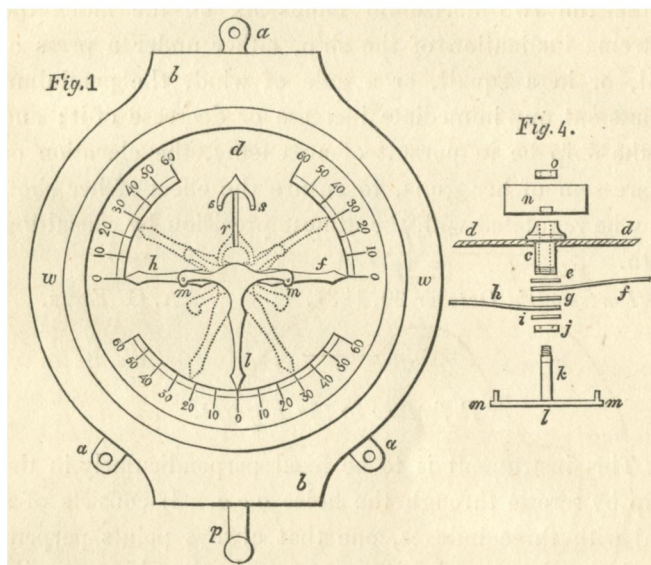
A. G. EDYE.

Reference to the Figures.

This instrument is to be fixed perpendicularly in the ship by screws through the holes *a a a*. It consists of a dial with three indexes, one that always points perpendicularly downwards, however much the ship may incline; it therefore shews the present position of the ship; the other two are loose, with only friction enough to remain wherever they are put; and the first index has arms to push them up, but cannot pull them down, consequently these indexes shew the utmost inclination that has occurred during the interval of observation.

Fig. 1 is a front view of the dial; fig. 2, a back view (the pendulum being moved aside); and, fig. 3, a side view, the case, *b b*, being in section. Fig. 4 is a top view of the pendulum, the three indexes and intermediate parts separate. In fig. 4, *c* is a pipe, screwed to the centre of the dial-plate *d*; on it is fitted, very tight, the

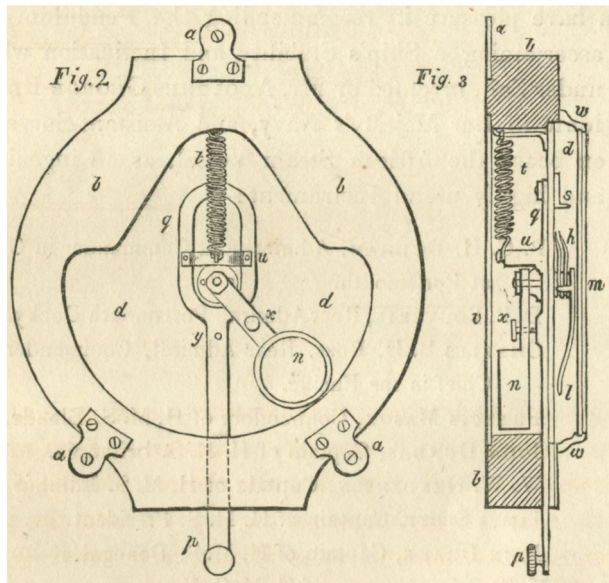
leather collar *e*, then the loose index *f* is put on, then another tight leather collar, *g*, and, after it, the second loose index, *h*, which is followed by the tight collar *i*, and screw-nut *j*; thus the friction between the leather



collars is enough to hold the indexes. *k* is the axis of the perpendicular index; *l m m*, the lateral arms, from which pins project enough to reach under the two indexes, *f* and *h*; the axis *k* is put through the pipe *c*; then the pendulum bar *n* is squared on to it, and is followed by the screw-nut *o*; thus the pendulum *n*, and index *l*, keep together always in a vertical position; and, consequently, the lateral arms *m m* are always horizontal. Now, whatever inclination occurs in the ship, the dial will be moved with it, but not the vertical index, or lateral arms: these arms will, therefore, prevent the loose indexes *f* or *h* from being carried down with the dial; so that, whenever the

ship rights, or its inclination lessens, the lateral indexes, *f* or *h*, will go up with the dial, and remain, as shewn by the dotted lines in fig. 1; and thus the greatest inclination becomes registered on the divisions provided for either index, whilst the pendulum index *l* at all times keeps shewing the position of the ship on the lower divisions.

To reset the indexes for another self-registry, an apparatus is added, by which they may, at any time, be brought down level, or as low as the present position of



the ship will allow; it consists of a slide, *p q*, fig. 2, placed at the back of the dial, with a pin at top, that comes through the slit *r* in the dial, fig. 1: on this are mounted the two pins, *s s*; so that when the slide at *p* is pulled down, the pins *s* will be brought down to the dotted place, and push the indexes before them; a spring *t* at

the back of the dial immediately pulls up the slide. The slide at q is made open to clear the axis, and, for the same purpose, it has a bridge, u , for the spring to lay hold of. v , fig. 3, is a thin door, to shut up the back; ww is the brass ring that holds the glass over the dial; x is a screw in the pendulum bar, that is made to enter the hole y , in the slide p , to fix both from moving, whilst the instrument is being carried about.

WE have pleasure in recommending the Pendulum for ascertaining a Ship's Stability and Inclination when under Sail, invented by Mr. ADOLPHUS GEORGE EDYE, Mate in Her Majesty's Navy, and Assistant-Surveyor on board the African Steam Vessel, as an ingenious and highly useful Instrument:—

P. C. H. DURHAM, Admiral and Commander in Chief at Portsmouth.

D. P. BOUVERIE, Rear Admiral, Portsmouth Dockyard.

CHARLES B. H. ROSS, Rear Admiral, Commander in Chief in the Pacific.

FRANCIS MASON, Commodore of H. M. S. Blonde.

JOHN DUNDAS, Captain of H. M. S. Britannia.

W. W. HENDERSON, Captain of H. M. S. Edinburgh.

JAMES SCOTT, Captain of H. M. S. President.

JOHN DRAKE, Captain of H. M. S. Donegal.

T. SEARLE, Captain of H. M. S. Victory.

J. TOWNSHEND, Captain of H. M. S. Tyne.

DUDLEY PELHAM, Commander of H. M. S. Wasp.

THOMAS HASTINGS, Captain of H. M. S. Excellent.

SIR,
His Majesty's Ship Inconstant,
Spithead, November 25, 1836.

A PENDULUM, invented by Mr. A. G. Edye, mate of His Majesty's Ship Britannia, having been fitted on board the Inconstant for trial, I think it due to Mr. Edye to take the earliest opportunity of reporting upon its merits; and I have great pleasure, therefore, in stating, for the information of the Lords Commissioners of the Admiralty, that in our recent cruise, during a month, with the experimental squadron, I had constant opportunities of judging of this pendulum, and that I have found it superior to any other I have ever seen before.

I am, Sir, &c. &c.

JOHN HAYES, *Captain.*

Admiral Sir P. C. H. Durham, G.C.B.
 &c. &c. &c. *Portsmouth.*

Victory, in Portsmouth Harbour,
 29th June, 1837.

SIR,

I HAVE pleasure in forwarding, to be laid before the Lords Commissioners of the Admiralty, a favourable report from the Hon. Captain Rous of the Pique, on the merits of the pendulum for indicating a ship's inclination under canvass, invented by Mr. A. G. Edye, mate of the Britannia, which has been in the Pique for trial under their lordships' authority: and a satisfactory report also from the captain of the Inconstant, where one was also fitted up for trial, having been transmitted to their lordships by Admiral Sir Philip Durham, in his letter, No. 636, of the 26th of November last; and having myself witnessed its great superiority to two other pendulums

tried against it in the Portsmouth Yacht, I am desirous that my intended flag-ship, the Wellesley, should be supplied with it; and I request you to be pleased to obtain permission for one to be made for me in Portsmouth yard.

I am, Sir, &c. &c.

Charles Wood, Esq.
Admiralty.

F. L. MAITLAND,
Rear Admiral.

SIR,
Her Majesty's Ship Pique,
Portsmouth, 23d June, 1837.

I BEG to recommend, for general use, a pendulum to indicate the ship's inclination under canvass (the invention of Mr. Edye, mate, R.N.), which has been supplied to Her Majesty's Ship Pique. It is very efficient for the purposes required, owing to its simplicity and correctness, and I have great pleasure in bringing it to your notice.

I am, Sir, &c. &c.

H. J. ROUS, *Captain.*

To Rear Admiral Sir F. L. Maitland, K.C.B.
Commander in Chief, Portsmouth.

Her Majesty's Ship Pique,
Plymouth Sound, 18th Nov. 1837.

MY DEAR SIR,

ALTHOUGH I have not had many opportunities of using Mr. Edye's pendulum, yet I am quite satisfied it is very efficient, from its simplicity, in ascertaining the inclination of a ship under sail. I am also of opinion it can be made very useful for ascertaining and keeping the ship in trim,—having used one for that purpose during my

command of the Pique, and have had no difficulty while in harbour, and occasionally at sea, in keeping her in trim, when the wash of the sea on her sternpost and stem would have prevented me doing so.

I am, &c. &c.

EDWARD BOXER.

No. IX.

ON THE DISADVANTAGE OF USING BLACK
PAINT ON BOARD SHIP.

The Thanks of the Society were voted to Mr. W. KENNISH, Carpenter on board H. M. S. Victory, Portsmouth, for the following Practical Remarks on the disadvantages that attend the use of Black Paint on board ship.

THERE is nothing that will prove this evil more than by observing the black streaks of a ship after being in a tropical climate for any length of time. It will be found that the wood round the fastenings is in a state of decay, while the white work is as sound as ever: the planks that are painted black will be found split in all directions, while the frequent necessity of caulking a ship in that situation likewise adds to the common destruction; and I am fully persuaded, that a piece of wood painted white will be preserved from perishing as long again, if exposed to the weather, as a similar piece painted black, especially in a tropical climate.

I have heard many men of considerable experience say, that black is good for nothing on wood, as it possesses